

North Fork of Clear Creek

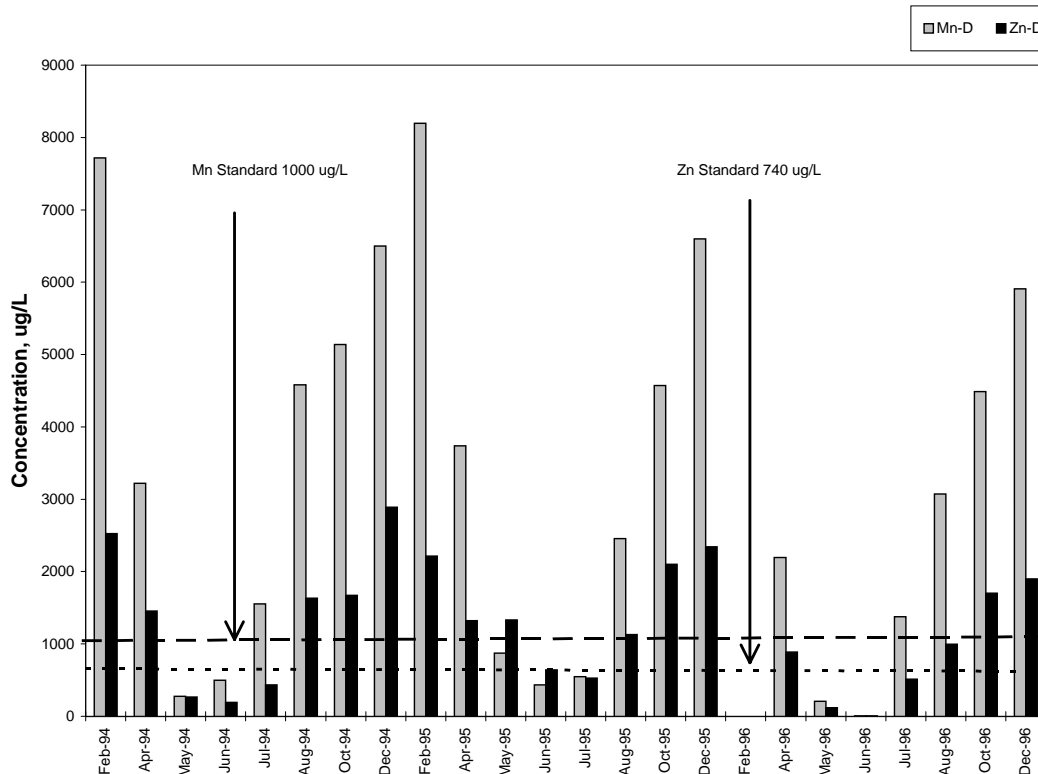
The North Fork of Clear Creek joins Clear Creek about 11 miles west of Golden. The North Fork is about 18 miles long and is bordered by Highway 119 for part of its length. The creek intersects one of the most heavily mined areas in the state. It flows by the historic mining towns of Black Hawk and Central City. (See Map 13.)

Above Black Hawk, the North Fork of Clear Creek contains rainbow and brook trout. Catchable-size rainbows are stocked by CDOW upstream of Black Hawk. Fish do not survive downstream of Black Hawk due to metal pollution and habitat destruction from historic mining.

CHALLENGE: *The North Fork of Clear Creek is the most severely impacted portion of the Clear Creek watershed. The water is very toxic to aquatic life and the habitat has been degraded by historic mining. Three major sources of metals to the North Fork are the Gregory Incline, Gregory Gulch, and the National Tunnel. Predictive water quality modeling completed by CDPHE and EPA has shown that even if these three sources were treated, the water quality in the North Fork would improve only to a certain extent, due to metals from non-point source groundwater and stream sediments. The source of the metals in the sediment is the numerous mine tailings piles and waste rock dumps located throughout this drainage. Material from these piles is washed into the North Fork during the sometimes violent rain storms that occur here. Although several of the mine tailings piles and waste rock dumps have been cleaned up under Superfund agreements with casino developers, many still remain. Unless this continuing influx of metals to the North Fork is reduced, the water quality will remain in poor condition.*



THE NORTH FORK
*An area under
development pressure.*

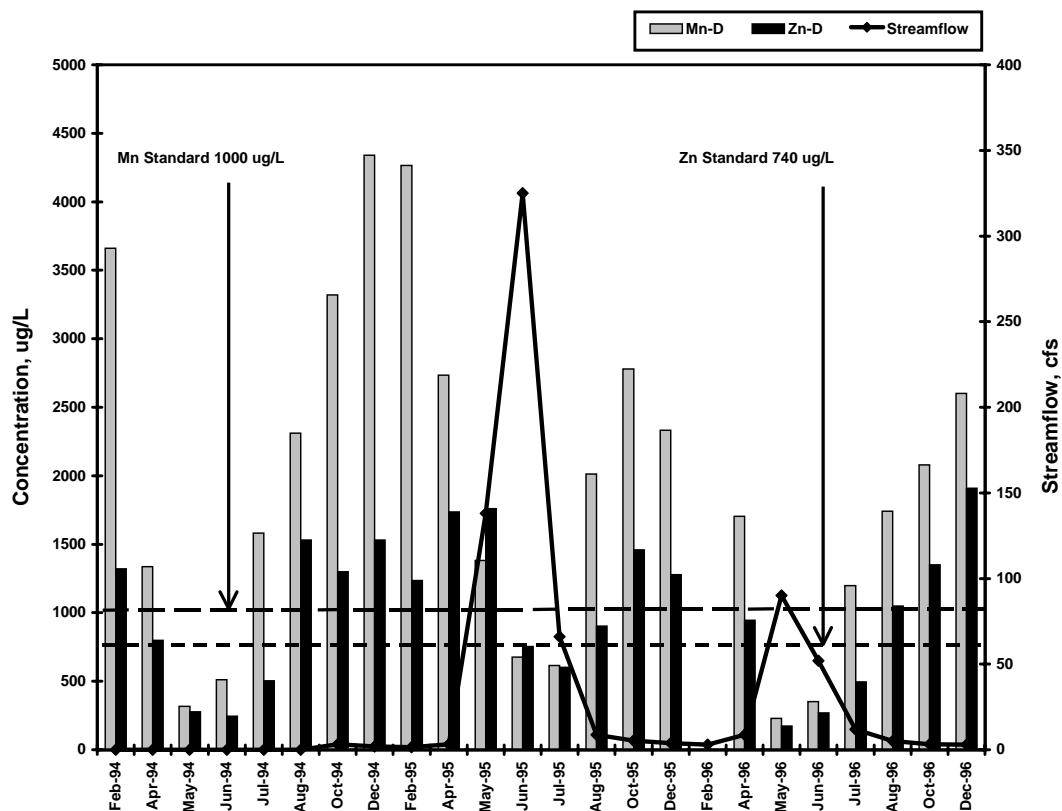


DISSOLVED ZINC AND DISSOLVED MANGANESE IN THE NORTH FORK UPSTREAM OF THE CENTRAL CITY/BLACK HAWK WASTEWATER TREATMENT

This graph shows data collected via the Upper Clear Creek Watershed Association, Standley Lake Cities, and EPA joint monitoring program. Data are for monitoring station CC-45 shown on Map 13. This station is upstream of the Central City/Black Hawk wastewater treatment plant, but downstream of many significant metal sources such as the National Tunnel, Gregory Gulch, and the Gregory Incline. Of the stations included in the monitoring program, this one routinely has the highest levels of metals. This monitoring station is located in Stream Segment #13 for the Clear Creek basin.

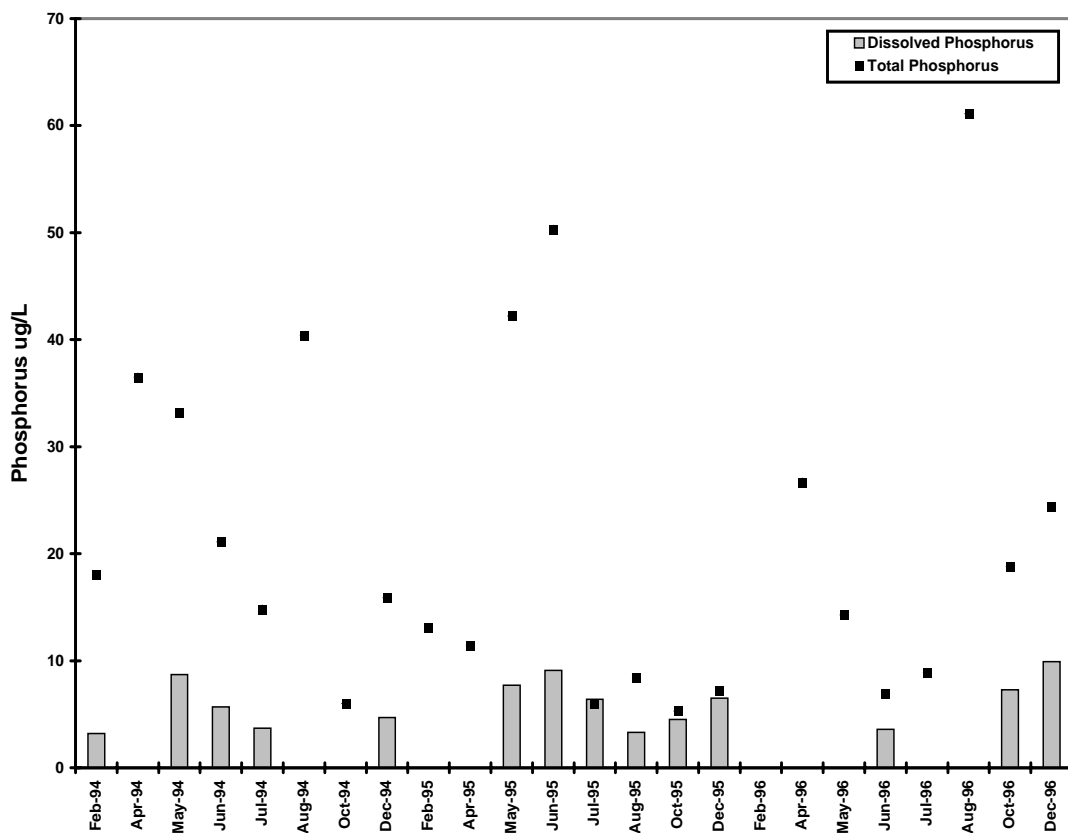
DISSOLVED ZINC AND DISSOLVED MANGANESE IN THE NORTH FORK NEAR THE CONFLUENCE WITH CLEAR CREEK

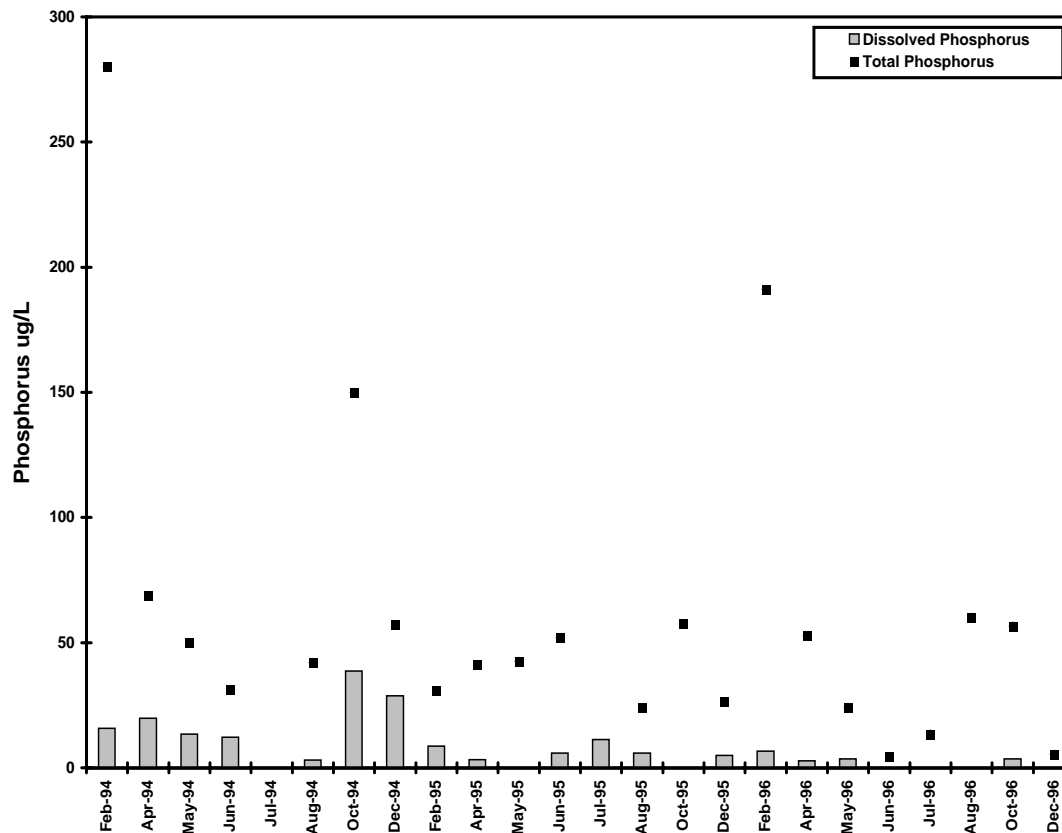
This graph shows data collected via the Upper Clear Creek Watershed Association, Standley Lake Cities, and EPA joint monitoring program. Data are for monitoring station CC-50 shown on Map 14. Stream flow data are available because there is a stream gage at this monitoring station. Zinc and manganese levels are elevated in North Clear Creek. The standards for both metals are routinely exceeded during the course of the year at this station. This monitoring station is located in Stream Segment #13 for the Clear Creek basin.



PHOSPHORUS IN THE NORTH FORK UPSTREAM OF THE CENTRAL CITY/BLACK HAWK WASTEWATER TREATMENT PLANT

This graph shows dissolved and total phosphorus at monitoring station CC-45, which is located on the North Fork of Clear Creek just upstream of the wastewater treatment plant. The monitoring is being conducted by the Upper Clear Creek Watershed Association and the Standley Lake Cities. There is no state stream standard for phosphorus on the North Fork of Clear Creek.





PHOSPHORUS IN THE NORTH FORK NEAR THE CONFLUENCE WITH THE CLEAR CREEK

This graph shows dissolved and total phosphorus at monitoring station CC-50, which is located on the North Fork of Clear Creek near the confluence with Clear Creek. The monitoring is being conducted by the Upper Clear Creek Watershed Association and the Standley Lake Cities. There is no state stream standard for phosphorus on the North Fork of Clear Creek.

Main Stem from North Fork through Clear Creek Canyon

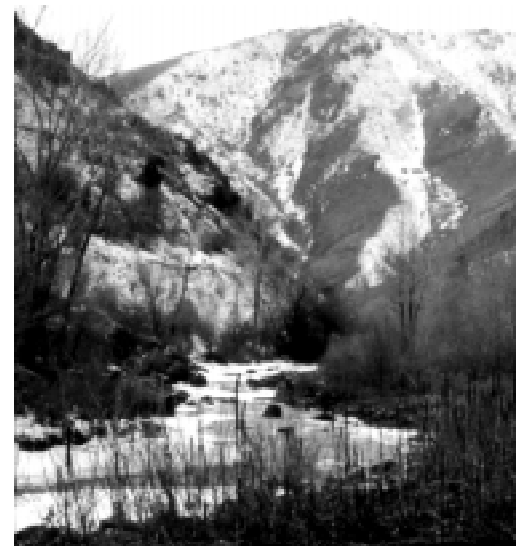
One of the most spectacular parts of the Clear Creek watershed is Clear Creek canyon. The canyon was formed by Clear Creek, and interesting geology is exposed along the canyon walls. The canyon provides much recreational use, such as fishing, kayaking, rafting, wildlife watching, and gold panning. Hiking the Beaver Brook trail is a popular activity. It also is common to see ice climbers during the winter and hang gliders during the warmer months. Map 14, provided in Chapter X, shows the canyon area.

In the canyon area, Clear Creek still shows the effects of metals from historic mining. Nonetheless, limited numbers of rainbow, brook, and brown trout are found in the canyon, as are longnose suckers whose numbers increase downstream.

SUCCESS STORY: *The Clear Creek Land Conservancy spearheaded an effort to balance the differing values of preserving Clear Creek Canyon in its present form and developing it. The Conservancy formed an advisory committee representing the diverse interests. Despite the possible adversarial nature of the task, the group was able to come up with a plan for protecting certain resource values in the canyon and for guiding thoughtful development. The plan was later adopted by Jefferson County, which has since spent over six million dollars in open space acquisition in the canyon.*

FOR MORE INFORMATION:

Clear Creek Canyon Plan, prepared by the Design Workshop for the Clear Creek Land Conservancy, August 1994.

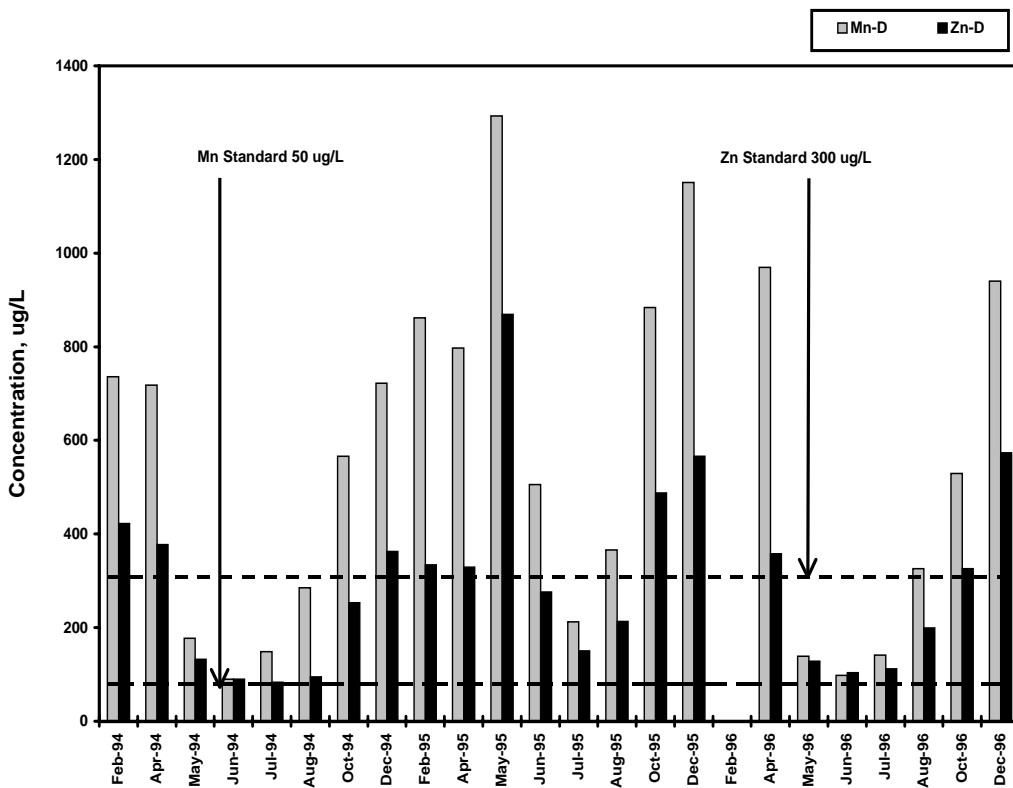


SNOW COVERED CANYON

The Clear Creek Canyon in the chill of winter awaits the spring run off.

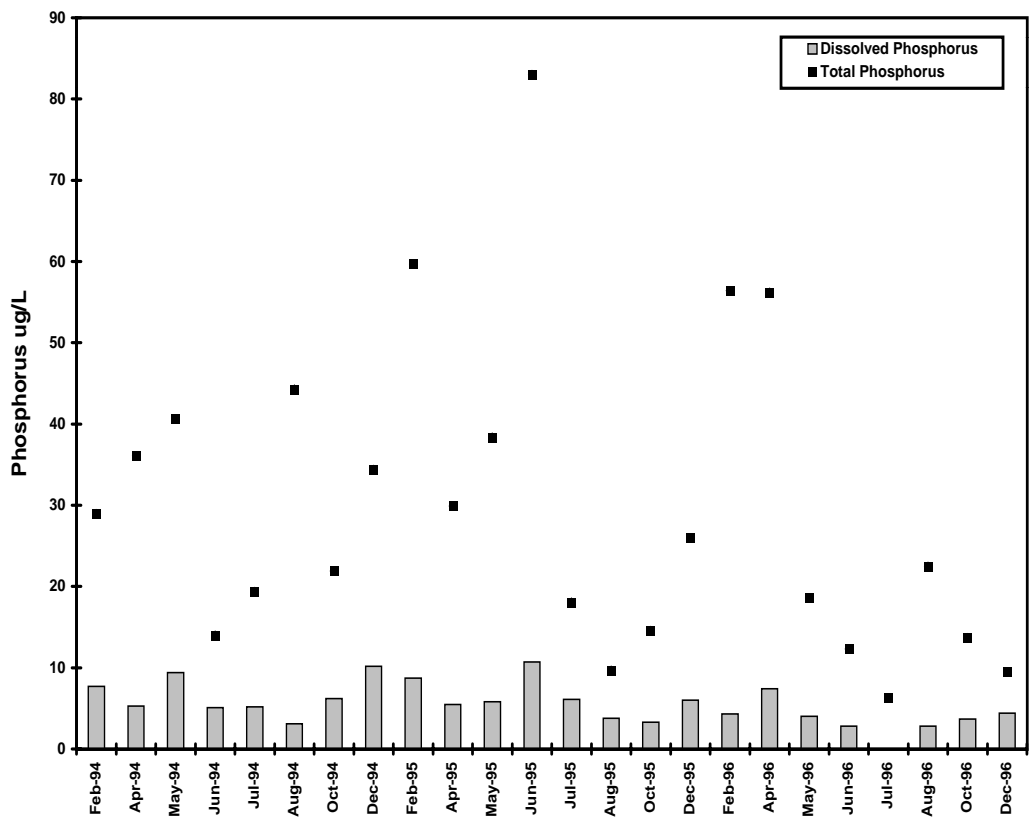
DISSOLVED ZINC AND DISSOLVED MANGANESE IN CLEAR CREEK DOWNSTREAM OF BEAVER BROOK AND SODA CREEK

This graph shows data collected via the Upper Clear Creek Watershed Association, Standley Lake Cities, and EPA joint monitoring program. Data are for monitoring station CC-55 shown on Map 14. Levels of zinc and manganese at this location tend to be above state stream standards during the winter months. Stream standards were also exceeded during the 1995 spring runoff. This monitoring station is located in Stream Segment #11 for the Clear Creek basin. Because of the water supply designation for this stream reach, the stream standard for manganese is the same as the secondary drinking water standard of 50 ug/L.



PHOSPHORUS IN CLEAR CREEK DOWNSTREAM OF BEAVER BROOK AND SODA CREEK

This graph shows dissolved and total phosphorus at monitoring station CC-55, which is located on Clear Creek downstream of Beaver Brook. The monitoring is being conducted by the Upper Clear Creek Watershed Association and the Standley Lake Cities. There is no state stream standard for phosphorus on Clear Creek.



Main Stem from Golden to the South Platte

It is in this area that Clear Creek becomes a river diverted into numerous canals. Map 15 depicts the system of canals that branch out from the river. Three of these, Farmers Highline Canal, Church Ditch and Croke Canal divert water from Clear Creek to Standley Lake, a popular recreational area. Clear Creek here also becomes an urban river flowing through the cities of Golden, Wheat Ridge, Arvada, and Denver before it joins the South Platte. The Clear Creek trail runs nearly the entire length of Clear Creek from the South Platte to Tunnel #1 on U.S. 6 west of Golden.

The Two Ponds National Wildlife Refuge, one of only a few urban refuges in the country, is located in this part of the Clear Creek watershed. The ponds in the refuge are fed with Clear Creek water via the Croke Canal.

One of Clear Creek's major tributaries, Ralston Creek, joins Clear Creek in this area. The headwaters of Ralston Creek are in Golden Gate Canyon State Park. A portion of the park itself is located in the Clear Creek watershed.

CDOW has found that this section of Clear Creek is best characterized as a warm water aquatic system with largemouth bass, green catfish, and creek chubs.

Numbers of these species are very limited, and sizes are small, due to low water quality and low and fluctuating water flow. Riparian habitat is also limited in this area.

CHALLENGE: *When chlorinated solvents began showing up in the private groundwater well used by some homeowners and the Twins Inn bar, there was cause for concern. EPA traced the source of the solvents to a chemical transfer station located near 56th and Sheridan Boulevard. Sloppy practices over the years led to the contamination of the groundwater aquifer. EPA is negotiating with companies responsible for the problem to have the contamination on the property cleaned up. In the meantime, EPA is treating the water from the contaminated well.*

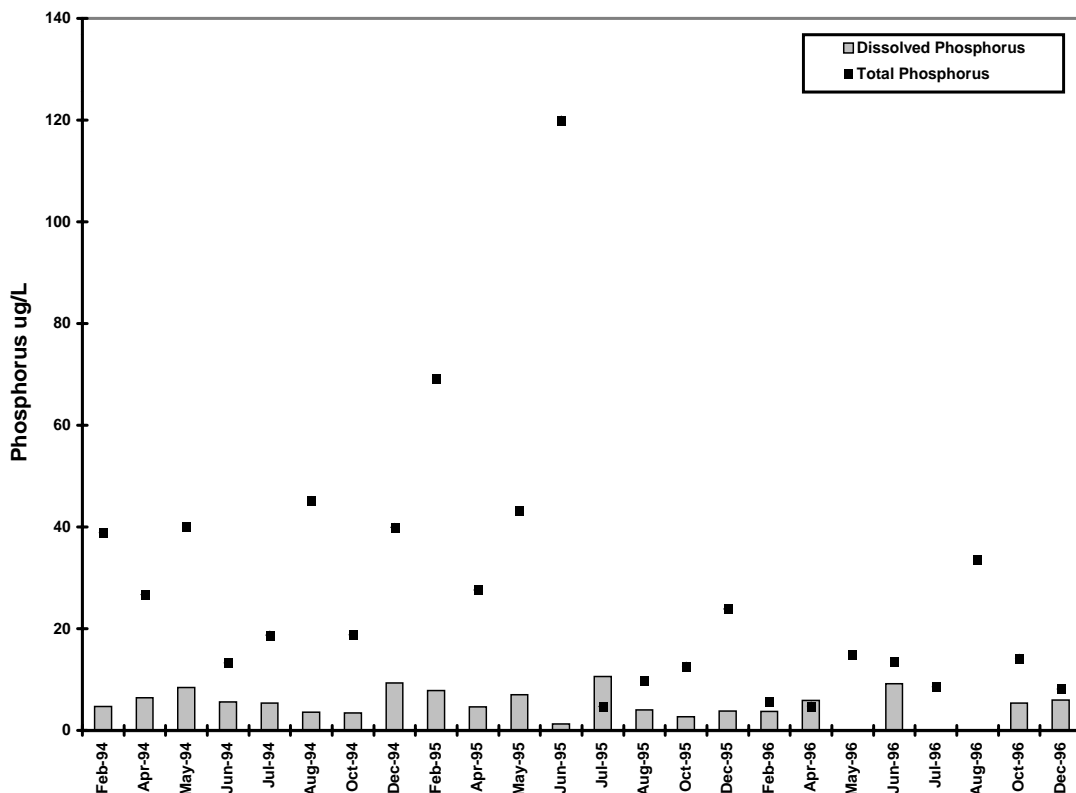


SUMMER TIME ACTIVITIES

As Clear Creek heads towards the Platte, the paved trails that brace its shoreline bring an abundance of summer activities.

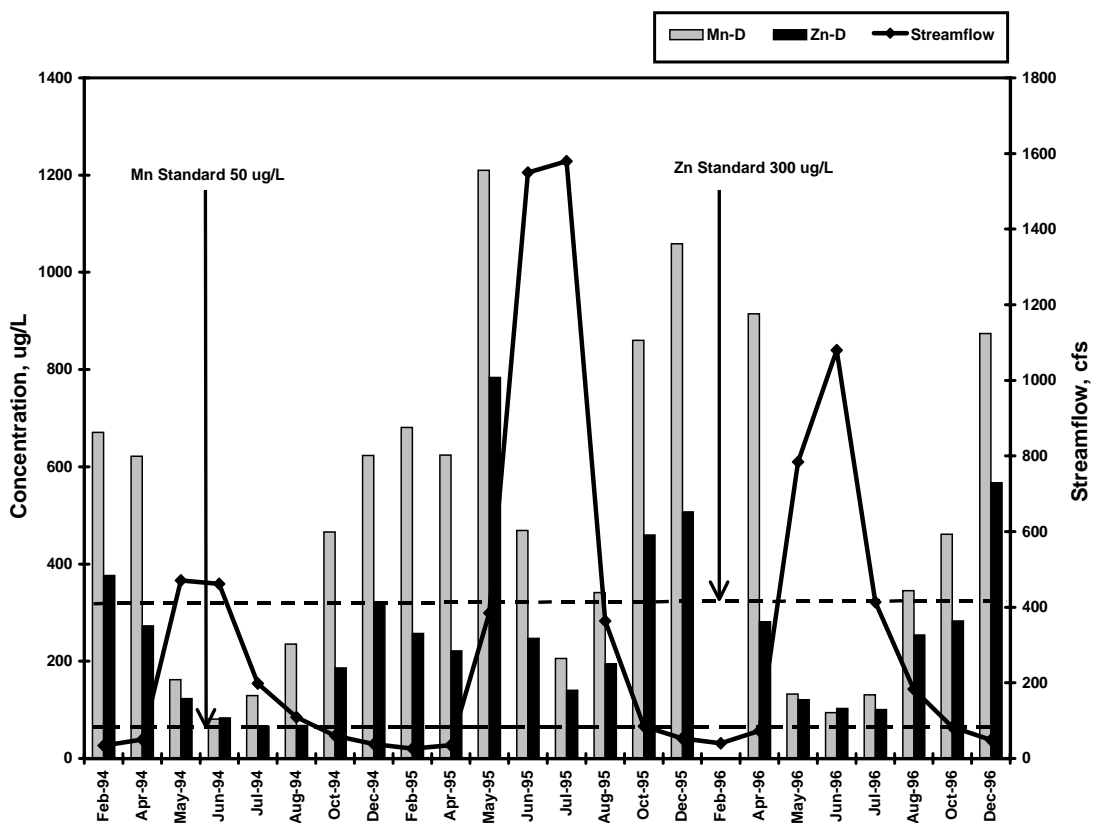
PHOSPHORUS IN CLEAR CREEK AT GOLDEN

This graph shows dissolved and total phosphorus at monitoring station CC-60, which is located at the Golden gaging station. The monitoring is being conducted by the Upper Clear Creek Watershed Association and the Standley Lake Cities. There is no state stream standard for phosphorus on Clear Creek.



DISSOLVED ZINC AND DISSOLVED MANGANESE IN CLEAR CREEK AT GOLDEN

This graph shows data collected via the Upper Clear Creek Watershed Association, Standley Lake Cities, and EPA joint monitoring program. Data are for monitoring station CC-60 shown on Map 14, and also on Map 15. It is located at the Golden stream gage. Stream flow information is available because of the gage. Water quality at Golden exceeds the state stream standards for zinc and manganese periodically throughout the year. This monitoring station is located in Stream Segment #11 for the Clear Creek basin. Because of the water supply designation for this stream reach, the stream standard for manganese is the same as the secondary drinking water standard of 50 ug/L.



VIII. WHAT'S NEXT

1997 is an appropriate year to initiate the Clear Creek State-of-the-Watershed series. As indicated in the Overview, 1987 marked the low ebb of relationships between local interests and state and federal agencies; collaborative efforts were at a standstill. Today, the situation is totally reversed. These relationships are thriving and much has been accomplished in the intervening years as documented in this report.

The capstone of this progress is best symbolized by two measures of success. The first measure is the stakeholder project list developed in 1993 which included 47 environmental improvement projects. A recent review of this list revealed that 26 projects had been completed, were under construction, or had realized notable progress. Projects on the list ranged from a simple vision statement to a watershed model to cleanups of some of the watershed's major sources of pollution such as the Argo Tunnel. The second measure of success is improvement in water quality in places such as the West Fork demonstrating that consistent and persistent efforts pay off.

The basis for this success is also two-fold. First was the willingness on the part of stakeholders from throughout the watershed to go back to basics and build strong relationships based on trust. The first Clear Creek Forum, for example, was about values. Second, there was an early and vocal call to move beyond information exchange to on-the-ground projects. It worked!

What's next? can be described in a word: momentum. Clear Creek has moved from relationship building and information sharing to consensus-based, on-the-ground action. The Project 2000 List has been developed to supersede the 1993 list. There is every reason to believe that many of these projects will be completed—what's on the list seems to get done.

It is instructive to reflect on the watershed effort's social, technical, and economic infrastructure which is the basis for continued momentum:

- Solid stakeholder relationships and numerous forums to learn about and address issues—the “culture of cooperation.”
- A broad base of expertise drawn from local communities, industry, and government agencies.
- Good data and several watershed models to facilitate problem identification, project selection, and to measure progress.
- A general consensus as to the major problems and solutions in developing a water quality improvement strategy—the “Project 2000 List.”
- Multiple resources ranging from voluntary public-private initiative to public and private grants to Superfund efforts.
- A desire to be good stewards of the beauty, the utility, and the special sense of place of the Clear Creek watershed.



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